IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

re Application of	)	
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GREFENSTEIN et al.	)	Art Unit: 1773
	)	
Serial No. 08/987,775	)	Examiner: Kruer
	)	
Filed: December 9, 1997	)	
	)	
For: LAMINATED SHEETS OR FILMS AND MOLDINGS THEREOF	)	

Honorable Comm'r. of Patents
PO Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR § 1.132

I, Achim Grefenstein, Dr., a citizen of the Federal Republic of Germany and residing at D-67122 Altrip, Germany, declare as follows:

I hold a Ph.D. degree in Mechanical Engineering from the University of Aachen which was awarded in 1994. I am employed by BASF Aktiengesellschaft of 67056 Ludwigshafen, Germany. In total, I have approximately 10 years experience in work relating to thermoplastic molding compositions and films and (co)extrusion thereof. Therefore, I am familiar with the field to which the subject application relates. I am also familiar with the examiner's rejections of the claims of the subject application.

In the present Declaration, I state the results of Gloss and Scratch Resistant Testing of Laminated Sheets as attached in the Appendix A.

Furthermore, during the course of the experimentation it was found that a top layer of styrene-acrylonitrile co-polymer leads to a high gloss and a high scratch resistance of the laminated sheets or films. This was found by carrying out the following experiment:

The first laminated sheet or film consisted of 950 µm ASA which was colored and 50 µm SAN top layer. A second laminated sheet or film consisted of 750 µm ASA which was colored, an inter layer of 200 µm SAN which was colored with effect colorants, and 50 µm SAN top layer.

These products could be co-extruded to laminated sheets or films at a temperature of 230°C without any problems. The gloss of these laminated sheets or films was significantly higher even than a corresponding laminated sheet or film having a PMMA top layer. The gloss at 20° was 99 for the laminated sheet or film containing the SAN top layer, whereas for a PMMA top layer the value was only 79. For an angle of 60° the gloss was 100 for the SAN top layer and only 87 for the PMMA top layer.

The sheets were tested with the AMTEC-Kistler-test which is usually employed in the automobile industry. This is carried out by treating black test moldings ten times with a brush and an aqueous washing detergent mixture containing 1.5 g/L sand. The gloss was determined before and after the treatment under an angle of 20°. Before the treatment, the gloss for the sheet or film with a SAN top layer was 99, whereas the sheet with a PMMA top layer was only 79. After the treatment according to the AMTEC-Kistler-test the gloss was 34 (38-39) for the SAN top layer and only 8 (9-11) for the PMMA top

layer.

Thus, the additionally claimed laminated sheets or films containing the SAN top layer show an improved gloss and scratch resistance even when compared with the PMMA top layer. These laminated sheets or films containing the SAN top layer are not disclosed in any of the prior art references. Consequently, we hold the view that the claim directed to these laminated sheets or films is novel and inventive over the prior art references.

Signed at 67056 Ludwigshafen, Germany, this 9th day of Sep., 2003

Appendix A- Declaration of Dr. Grefenstein Serial No. 08/987,775

Examples of Red Sheets	**V1**	**V2**	**1**	**2**	**3**	**4**
Top layer 50μm	PMMA	PMMA	PMMA	PMMA	SAN	SAN
Middle layer 200μm		PMMA		PMMA		SAN
Substrate layer 750 to 950μm	ABS	ABS+PC	ASA	ASA+PC	ASA+PC	ASA + PC
Extrusion temperature [°C]	235-250	230-255	238-258	240-260	238-257	240-255
Starting gloss 20°	79	80	79	80	100	101
Remaining gloss after car-washplant simulation	10	9	11	9	38	39
Colour difference dE after 1500 h	10,1	6,1	2,6	2,8	2,5	2,4
Gloss after weathering 1500 h	69	61	77	76	100	99
Color difference dE after weathering 3000h	12.3	8.1	4	5.2	3.8	3.9
Gloss after weathering 3000h	71	59	75	75	90	93
Resistance against pankreatin up to [°C]	36	38	40	36	69	67

Gloss measurement according to DIN67530
Car-wash plant simulation according to DIN55668
Weathering according to iso4892-2, process A

Color difference diffuse 8° according to DIN53236
Resistance against Pankrealin according to DC-test PBODC 371

	Trade name	Producer
PMMA top layer	Lucryl	Formerly BASF
PMMA inter layer	Lucryl	Formerly BASF
San	Luran	BASF
ABS	Terluran	BASF
ASA	Luran S	BASF
ABS+PC	Bayblend	Bayer
ASA+PC	Luran S	BASF

Same results were obtained when the substrate layer contained 5% by weight of ~~quartz flour~~ titanium dioxide